

IN THE ABSTRACT

A method and apparatus for running a plurality of tests concurrently to obtain data relating to the electrophysiological properties of receptors and channels in biological membranes of test subjects, such as, for example, *Xenopus* oocytes. The invention further provides software for controlling, acquiring, and recording data relating to electrophysiological properties of receptors and channels in biological membranes of test subjects, such as, for example, oocytes. This invention increases the throughput rate for experiments and assays employing receptors and ion channels expressed in biological membranes of test subjects, such as, for example, oocytes. In the case of an oocyte, these receptors and channels may be natively expressed (endogenous), may be placed into the oocyte (exogenous), or may be expressed from other RNA or DNA previously placed into the oocyte (exogenous).